

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Previously Presented) A washing machine having a partial washing apparatus that removes dirt from an article to be washed by means of supersonic vibration,

wherein the partial washing apparatus is fitted to the washing machine proper so as to be movable between an in-use position in which the partial washing apparatus is placed when in use and a not-in-use position, different from the in-use position, in which the partial washing apparatus is placed when not in use.

2-4. (Canceled)

5. (Previously Presented) A washing machine having a washing tub in which to put an article to be washed and comprising:

a partial washing apparatus that removes dirt from the article to be washed by means of supersonic vibration,

wherein the partial washing apparatus comprises:

a supersonic resonator for generating supersonic vibration;
and

a supersonic vibration horn for amplifying the supersonic vibration, the supersonic vibration horn being arranged with a tip thereof placed near the article to be washed.

6. (Original) A washing machine having a partial washing apparatus as claimed in claim 5,

wherein the washing machine proper has a lid that is opened by being folded in two portions, of which the portion that lies in front permits the partial washing apparatus to be fitted thereon approximately at a lateral center thereof.

7. (Original) A washing machine having a partial washing apparatus as claimed in claim 5,

wherein the partial washing apparatus has a cover that is movable between a position in which it exposes the supersonic vibration horn and a position in which it covers the supersonic vibration horn.

8. (Original) A washing machine having a partial washing apparatus as claimed in claim 7,

wherein the cover has an end surface at a tip thereof subjected to a friction reduction process.

9. (Original) A washing machine having a partial washing apparatus as claimed in claim 5, further comprising:

a bracket member that is detachably attachable to the washing machine proper,

wherein the partial washing apparatus is fitted to the washing machine proper with the bracket member.

10. (Previously Presented) A washing machine having a washing tub in which to put an article to be washed and comprising:

a partial washing apparatus that removes dirt from the article to be washed by means of supersonic vibration,

wherein the partial washing apparatus comprises:

a supersonic resonator for generating supersonic vibration;

a supersonic vibration horn for amplifying the supersonic vibration, the supersonic vibration horn being arranged with a tip thereof placed near the article to be washed; and

a liquid-feed tank for storing the washing liquid, which is fed therefrom to the tip of the supersonic vibration horn.

11. (Original) A washing machine having a partial washing apparatus as claimed in claim 10,

wherein the liquid-feed tank has a recessed portion, in which the supersonic resonator is arranged.

12. (Previously Presented) A washing machine having a partial washing apparatus as claimed in claim 10, further comprising:

a case that covers the partial washing apparatus and that has a slit formed therein in which the article to be washed is inserted,

wherein the washing liquid is fed to the slit.

13. (Original) A washing machine having a partial washing apparatus as claimed in claim 12,

wherein the partial washing apparatus has an upper cover and a lower cover arranged below the upper cover, and the article to be washed inserted in the slit is placed between the upper and lower covers,

wherein the upper cover is so curved as to be convex downward, with an opening formed at a bottom, and the washing liquid is fed to an inner portion of the upper cover,

wherein the lower cover is so curved as to be convex upward, with an opening formed at a top, and

wherein the tip of the supersonic vibration horn is arranged in the opening of the upper cover at a level identical with or lower than that opening.

14. (Original) A washing machine having a partial washing apparatus as claimed in claim 13,

wherein the partial washing apparatus has a solid soap chamber for storing a cake of solid soap with a lower end thereof exposed,

wherein the solid soap chamber has a pressing portion for pressing the solid soap downward so as to keep the lower end of the solid soap at a level approximately identical with the tip of the supersonic vibration horn.

15. (Original) A washing machine having a partial washing apparatus as claimed in claim 10,

wherein the partial washing apparatus has a solid soap chamber for storing a cake of solid soap with a part thereof exposed, and the solid soap is applied to the article to be washed when water is fed to the article to be washed.

16. (Original) A washing machine having a partial washing apparatus as claimed in claim 10,

wherein the liquid-feed tank permits a plurality of washing liquids to be stored separately so that one of the washing liquids can be selectively fed to the article to be washed.

17. (Original) A washing machine having a partial washing apparatus as claimed in claim 16,

wherein the partial washing apparatus comprises:

the liquid-feed tank having a plurality of reservoirs;

a pumping device for feeding a washing liquid from the reservoirs to the article to be washed;

a plurality of valves provided one between each of the reservoirs and the pumping device;

an input device that issues an instruction that one of the valves be selectively opened; and

a controller that opens one of the valves in accordance with the instruction from the input device and that then drives the pumping device.

18. (Original) A washing machine having a partial washing apparatus as claimed in claim 16,

wherein the liquid-feed tank is composed of a plurality of liquid-feed tanks of which one is selectively fitted to the partial washing apparatus.

19. (Previously Presented) A washing machine having a washing tub in which to put an article to be washed and comprising:

a partial washing apparatus that removes dirt from the article to be washed by means of supersonic vibration,

wherein the washing liquid is functional water obtained by altering properties of tap water in such a way that it offers higher detergent solubility or higher supersonic transmission efficiency.

20. (Original) A washing machine having a partial washing apparatus as claimed in claim 19,

wherein the functional water is acidic-ion or alkaline-ion water obtained by electrolyzing tap water.

21. (Original) A washing machine having a partial washing apparatus as claimed in claim 19,

wherein the functional water is soft water obtained by removing a hard-water content from tap water.

22. (Original) A washing machine having a partial washing apparatus as claimed in claim 19,

wherein the functional water is obtained by deaerating tap water by removing therefrom gas contents dissolved therein.

23. (Original) A washing machine having a partial washing apparatus as claimed in claim 19,

wherein the partial washing apparatus has a ultrasonic vibration horn for amplifying the supersonic vibration.

24. (Original) A washing apparatus that washes an article to be washed by feeding a washing liquid stored in a liquid-feed tank to the article to be washed,

wherein the liquid-feed tank permits a plurality of washing liquids to be stored separately so that one of the washing liquids can be selectively fed to the article to be washed.

25. (Original) A washing apparatus as claimed in claim 24, comprising:

the liquid-feed tank having a plurality of reservoirs;

a pumping device for feeding a washing liquid from the reservoirs to the article to be washed;

a plurality of valves provided one between each of the reservoirs and the pumping device;

an input device that issues an instruction that one of the valves be selectively opened; and

a controller that opens one of the valves in accordance with the instruction from the input device and that then drives the pumping device.

26. (Original) A washing apparatus as claimed in claim 25,

wherein the washing liquid is fed to the pumping device by being allowed to drop freely into the pumping device.

27. (Original) A washing apparatus as claimed in claim 24,

wherein the liquid-feed tank is composed of a plurality of liquid-feed tanks of which one is selectively fitted to the washing apparatus.

28. (Original) A washing apparatus as claimed in claim 27, further comprising:

a pumping device for feeding the washing liquid from the liquid-feed tank to the article to be washed,

wherein the pumping device is a magnet-coupled pump composed of a motor portion and a pump portion that are detachably held together by magnetism, and

wherein the pump portion is attached to and detached from the motor portion integrally with the liquid-feed tank.

29-34. (Canceled)

35. (Previously Presented) A washing machine having a partial washing apparatus as claimed in claim 5,

wherein a washing liquid is fed to a portion of the partial washing apparatus where the article to be washed is washed.

36. (Previously Presented) A washing machine having a partial washing apparatus as claimed in claim 5,

wherein a case is provided that covers the supersonic vibration horn and that has an opening formed in a portion thereof corresponding to the tip of the supersonic vibration horn so that the tip of the supersonic vibration horn protrudes out through the opening.

37. (Previously Presented) A washing machine having a partial washing apparatus as claimed in claim 5,

wherein the partial washing apparatus is fitted to the washing machine proper so as to be movable between an in-use position above the washing machine in which the partial washing apparatus is placed when in use and a not-in-use position, different from the in-use position, in which the partial washing apparatus is placed when not in use.

38. (Previously Presented) A washing machine having a partial washing apparatus as claimed in claim 5,

wherein a holding member is provided that is pivotably supported in a peripheral portion of the washing machine at one end and that has the partial washing apparatus fitted at another end so that, as the holding member is pivoted, the partial washing apparatus is moved between the in-use position and the not-in-use position.

39. (Previously Presented) A washing machine having a partial washing apparatus as claimed in claim 5,

wherein a slit into which to insert the particle to be washed is provided below the supersonic vibration horn.

40. (Previously Presented) A washing machine having a partial washing apparatus as claimed in claim 39,

wherein a case is provided so as to cover the supersonic vibration horn, and the slit is formed in a lower portion of the case so as to be perpendicular to the tip of the supersonic vibration horn.

41. (Previously Presented) A washing machine having a partial washing apparatus as claimed in claim 40,

wherein the slit is formed by an upper cover and a lower cover that together constitute the case.

42. (Previously Presented) A washing machine having a partial washing apparatus as claimed in claim 41,

wherein an opening is formed in the upper cover, and the tip of the supersonic vibration horn is arranged so as to point to the opening.

43. (Previously Presented) A washing machine having a partial washing apparatus as claimed in claim 42,

wherein an opening communicating with a drain outlet is formed in a lower cover in which the slit is formed, right below the supersonic vibration horn.

44. (Previously Presented) A washing machine having a partial washing apparatus as claimed in claim 39, wherein a washing liquid is fed to the slit.

45. (Previously Presented) A washing apparatus comprising:
a supersonic wave generator;
a supersonic vibration horn for amplifying supersonic vibration, the supersonic vibration horn having a slit formed in a lower portion thereof so as to permit an article to be washed to be inserted in the slit.

46. (Previously Presented) A washing apparatus as claimed in claim 45,
wherein a case is provided so as to cover the supersonic vibration horn, and the slit is formed in a lower portion of the case so as to be perpendicular to the tip of the supersonic vibration horn.

47. (Previously Presented) A washing apparatus as claimed in claim 45,
wherein the slit is formed by an upper cover and a lower cover that together constitute the case.

48. (Previously Presented) A washing apparatus as claimed in claim 47,

wherein an opening is formed in the upper cover, and the tip of the supersonic vibration horn is arranged so as to point to the opening.

49. (Previously Presented) A washing apparatus as claimed in claim 48,

wherein an opening communicating with a drain outlet is formed in a lower wall surface in which the slit is formed, right below the supersonic vibration horn.

50. (Previously Presented) A washing apparatus as claimed in claim 45,

wherein a washing liquid is fed to the slit.

51. (Previously Presented) A supersonic vibrator comprising:

a supersonic resonator for generating supersonic vibration;

a supersonic vibration horn connected to the supersonic resonator; and

a case having the supersonic resonator and the supersonic vibration horn housed inside, wherein a tip portion of the

supersonic vibration horn protrudes from a tip of the case.